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U.S. Patent Application Serial No. 10/528,450
Response to OA dated April 24, 2007

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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-20 (Canceled)

Claim 21 (New): A manufacturing method for semiconductor devices comprising the steps of:

loading an object to be processed into a processing chamber;
forming a film on the object by alternately supply a material gas and an oxidizer generated by bubbling ozone in a fluid containing at least hydrogen atoms into the processing chamber; and
unloading the object from the processing chamber after forming the film.

Claim 22 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, a processing temperature is lower than a temperature for causing a CVD reaction.

Claim 23 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, the material gas is supplied at a temperature

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level where the material does not decompose.

Claim 24 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, supplying the material gas makes the surface of the object adsorb the material, and supplying the oxidizer causes the material adsorbed on the surface of the object to react with the oxidizer in order to form the film.

Claim 25 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, the gas inside the processing chamber is replaced in the period between the supply of the material gas and the supply of the oxidizer.

Claim 26 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, the following steps make up one cycle and this cycle is repeated multiple times:

supplying the material gas into the processing chamber;

replacing the gas inside the processing chamber;

supplying the oxidizer into the processing chamber; and

replacing the gas inside the processing chamber.

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Claim 27 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, the film is formed one atomic layer at a time.

Claim 28 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, the film is formed by atomic layer deposition.

Claim 29 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, a metal oxide film is formed.

Claim 30 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, an HfO_2 , ZrO_2 or Ta_2O_5 film is formed.

Claim 31 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, an HfO_2 film is formed utilizing $\text{Hf}[\text{OC}(\text{CH}_3)_2\text{CH}_2\text{OCH}_3]_4$, $\text{Hf}[\text{N}(\text{C}_2\text{H}_5)_2]_4$, $\text{Hf}[\text{N}(\text{CH}_3)_2]_4$, or $\text{Hf}[\text{N}(\text{CH}_3)(\text{C}_2\text{H}_5)]_4$ as the material.

Claim 32 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, a ZrO_2 film is formed utilizing $\text{Zr}[\text{OC}(\text{CH}_3)_2\text{CH}_2\text{OCH}_3]_4$ as the material.

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Claim 33 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, a Ta_2O_5 film is formed utilizing $Ta(OC_2H_5)_5$ as the material.

Claim 34 (New): The manufacturing method for semiconductor devices according to claim 1, wherein in the step of forming the film, an oxidizer generated by bubbling ozone in a fluid of water, deionized water or hydrogen peroxide water is used.

Claim 35 (New): A substrate processing apparatus comprising:
a processing chamber for processing an object to be processed;
a heater for heating the object in the processing chamber;
an ozonizer for generating ozone;
a bubbler for generating an oxidizer by bubbling ozone generated by the ozonizer, in fluid containing at least hydrogen atoms;
an oxidizer supply pipe for supplying the oxidizer generated by the bubbler into the processing chamber; and
a material gas supply pipe for supplying the material gas into the processing chamber,
wherein the material gas supply pipe and the oxidizer supply pipe are structured to alternately supply the material gas and the oxidizer into the processing chamber.